Implementing 2007 and 2010 Heavy-Duty Diesel Engine Standards

Greg Orehowsky, US EPA
Office of Transportation and Air Quality
Compliance and Innovative Strategies Division

ULSD Implementation for 2007

At refiner level, production is at 90% of highway diesel and has been since the fall of 2006

At retail level, data from the first quarter of 2007 shows 90% of pumps contain fuel that is at or below 15 ppm

- We are still addressing the need for improved labeling so consumers are aware of the true availability of ULSD
- Office of Enforcement and Compliance Assurance (OECA) is auditing sulfur levels and starting to fine retailers without proper labels

ULSD Implementation Schedule

Who	Covered Fuel	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Highway Diesel Fuel	80% 15 ppm / 20% 500 ppm				100% 15 ppm (including small refiner fuel)				
Large Refiner & Importer	Nonroad		500	500	500	15	15	15	15	15
Large Refiner & Importer	Loco and Marine		500	500	500	500	500	15	15	15
	NRLM with Credits (Not in NE or AK)		500	500	500	500	500	500	500	15
Small Refiner	NRLM (Not in NE, w/ approval in AK)		500	500	500	500	500	500	500	15
Transmix Processor & In-use	Nonroad (Not in NE or AK)		500	500	500	500	500	500	500	15
Transmix Processor & In-use	Loco and Marine (Not in NE or AK)		500	500	500	500	500	500	500	500

2007 On-highway Implementation

Early discussions with manufacturers eased implementation
- Certification meetings began 2 years ahead of 2007 model year

50 Heavy-duty Diesel engine families certified
- 30 engine families at 1.1 - 1.3 NOx or NMHC+NOx
- 6 engine families at 1.4 - 1.8 NOx or NMHC+NOx
- 14 engine families at 1.9 - 2.5 NOx or NMHC+NOx
  - Credit users or phase-out engines

Cummins light heavy-duty diesel truck chassis certified with NOx adsorber at 0.2 g/mi and 0.4 g/mi

Most engines at 0.01 PM equipped with diesel particulate filters
- 3 engine families at 0.10 PM (from early introduction of DPFs)

2010 Implementation

2010 Technology is available

- NOx adsorber vehicle already certified
- SCR technology already chosen path for some manufacturers
  - Engine manufacturers Volvo/Mack and Daimler/DDC have identified SCR as 2010 technology

Implementing SCR technology

- A number of light-duty manufacturers will use SCR in 2008
  - Will resolve or identify issues before 2010

SCR guidance document

- EPA published draft guidance in FR on 11/16/06
- Comments requested
- Final guidance issued in Dear Manufacturer letter on 3/27/07, http://www.epa.gov/otaq/cert/dearmfr/cisd0707.pdf

2010 Implementation

SCR guidance document

- Technology relies on driver to maintain emissions control
  - Gives rise to unique issues for 2010
- Gives examples of acceptable SCR systems but allows for other options
- Some important issues discussed in guidance:
  - Urea infrastructure
    - Dealerships
    - Truck Stops
    - Back-up plan
  - Refilling urea tank
    - driver warning
    - inducement
    - urea quality
  - Allowable maintenance – Need to work with industry to establish allowable re-fill interval for urea

Next Steps

Provide necessary guidance for 2010 as soon as possible

- SCR guidance in place
- Establish industry wide maintenance intervals for DPFs, NOx adsorbers and SCR systems
- Update 2007 aftertreatment adjustment factors guidance as necessary
- Possible new guidance for NTE deficiencies and OBD implementation

Work with manufacturers to approve strategies and review technology

- Variations on expected technologies – again requesting early discussions with manufacturers

Compliance testing

- Confirmatory Certification
- In-use testing – manufacturer, EPA, and ARB